UNITED STATES PATENT AND TRADEMARK OFFICE

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10/511,806	10/19/2004	Arnoldus Werner Johannes Oomen	NL 020692	4812

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EXAMINER
PAUL, DISLER

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 14-21* is/are rejected.

7)☒ Claim(s) *9-13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *11/02/05*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   Claim 20 recites the limitations "the multi-channel audio signal & the first and

second portion of information" in claim. There is insufficient antecedent basis for this

limitation in the claim.

Specification

2.   The *reference of the original claims* as disclose in the specification is not

appropriate.

      The applicant is advised to delete all the reference wherein the specific claims

are mentioned in the specification.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1, 3-8,14,16-21 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Henn et al. (US 7,382,886) and Nishio et al. (US 2003/0088423 A1).

      Re claim 1, Henn et al. disclose of the method of encoding a

multi-channel audio signal comprising at least two audio channels, the

method comprising, generating a single channel audio signal and

encoding the single channel audio signal into a bit stream as an

encoded single channel audio signal (fig.1; col.4 line 10-20),

generating information from the at least two audio channels allowing

to recover with a required quality level the multi-channel audio

signal from the single channel audio signal and the information (fig.1

wt (121); fig.4b), the generating of the information comprising,

determining a first portion of the information for a first frequency

region of the multi-channel audio signal, and encoding the first

portion of the information into the bit stream as an encoded first

portion of the information, and determining a second portion of the

information for a second frequency region of the multi-channel audio

signal, and encoding the second portion of the information into the

bit stream as an encoded second portion of the information (col.9 line

50- col.10 line 6/each low, High band signals to put into different

bit stream for transmitting).

But, Henn et al. fail to disclose of the second frequency region

being a portion of the first frequency region to encode in bit stream.

But, Nishio et al. disclose of a encoding system wherein similar

concept of the second frequency region being a portion of the first

frequency region to encode in bit stream (fig.5-6; page 7 par [0086])

for purpose of efficiently transmitting audio signal to enhance

encoding accurately. Thus, taking the combined teaching of Henn et al.

and Nishio et al. as a whole, it would have been obvious for one of

the ordinary skill in the art at the time of the invention to have

modify Henn et al. with the encoding system wherein similar concept of the second frequency region being a portion of the first frequency region to encode in bit stream for purpose of efficiently transmitting audio signal to enhance encoding accurately.

Re claim 3, the method of encoding as claimed in claim 1, wherein the single channel audio signal is a particular combination of the at least two audio channels (fig.1 wt ((105)).

Re claim 4, the method of encoding as claimed in claim 1, characterized in that the information comprises sets of parameters, the first portion comprises at least a first one of the sets of parameters, the second portion comprises at least a second one of the sets of parameters, wherein each set of parameters is associated with a corresponding frequency region (fig.4a; col.9 line 50-65).

RE claim 5, the method of encoding as claimed in claim 4, characterized in that the sets of parameters comprise at least one localization cue (col.2 line 47-52).

Re claim 7, the method of encoding as claimed in claim 1 with the low band and high band frequency band and further with possibility of extending the bitstream of frequency signal (col.9 line 50-55), but, the combined teaching of Henn et al. and Nishio et al. as a whole, fail to disclose of the characterized in that the first frequency

region covers a full bandwidth of the multi-channel audio signal. But,

official notice is taken the concept of having a frequency region

covers a full bandwidth of the multi-channel audio signal is well

known in the art, thus it would have been obvious for one of the

ordinary skill in the art to have modify the combined teaching of Henn

et al. and Nishio et al. as a whole, with such first frequency region

covers a full bandwidth of the multi-channel audio signal for

transmitting the stereo signals.

Re claims 14, 17-18 which are the broader version of claim 1 have

been analyzed and rejection accordingly based on claim 1.

Re claim 19, the method of decoding a multi-channel audio signal

being encoded as claimed in claim 17, the method of decoding

comprising: obtaining a decoded single channel audio signal, obtaining

decoded information from the information allowing to recover the

multi-channel audio signal from the decoded single channel audio

signal and the decoded information, the decoded information comprises

the first portion of the information and the second portion of the

information, and applying either the first portion of the information

or the first portion and the second portion of the information on the

single channel audio signal to generate the decoded multi-channel

audio signal (fig.1 ; col.4 line 20-31; .

Re claim 8, the combined teaching of Henn et al. and Nishio et

al. as a whole, disclose of the method of encoding as claimed in

claim 1, characterized in that the first frequency region

substantially covers a full bandwidth of the multi-channel audio

signal, the second frequency region covers a portion of the full

bandwidth (Nishio, fig.5-6; par[0085-0086]), and in that the

determining of the second portion of the information is adapted to

determine sets of parameters for both the second frequency region and

a set of further frequency regions, the second frequency region and

the set of further frequency regions substantially covering the full

bandwidth, where in the set of further frequency regions comprises at

least one further frequency region (Nishio, fig.5-6).

XXXnote (the examiner consider such the second portion of the

information is *adapted/capable* as not positively limiting the claim

above, and thus Nishio may be capable of also doing the same).

Re claim 16, the apparatus for supplying an audio signal, the

apparatus comprising: an input for receiving an audio signal, an

encoder as claimed in claim 14 for encoding the audio signal to obtain

an encoded audio signal, and an output for supplying the encoded audio

signal. (Cellario, fig.1 wt (109)).

Re claim 6, the method of encoding as claimed in claim 5 with

localization cue, But, the combined teaching of Henn et al. and Nishio

et al. as a whole, fail to disclose of the specific wherein such
characterized in that the at least one localization cue is selected
from: an interaural level difference, an interaural time or phase
difference, or an interaural cross-correlation. But, official notice
is taken the concept of having such localization cue being of the
specific interaural level difference, an interaural time or phase
difference, or an interaural cross-correlation is well known in the
art, thus it would have been obvious for one of the ordinary skill in
the art to have modify the combined teaching of Henn et al. and Nishio
et al. as a whole, with the interaural level difference, an interaural
time or phase difference, or an interaural cross-correlation for
creating phantom sound signals.

Re claim 19, the method of decoding a multi-channel audio signal
being encoded as claimed in claim 17, the method of decoding
comprising: obtaining a decoded single channel audio signal, obtaining
decoded information from the information allowing to recover the
multi-channel audio signal from the decoded single channel audio
signal and the decoded information, the decoded information comprises
the first portion of the information and the second portion of the
information, and applying the parameters to generate the decoded
multi-channel audio signal (fig.1 (119,117); col.4 line 20-35).

But, the combined teaching of Henn et al. and Nishio et al. as a
whole, fail to disclose of the specific of applying either the first

portion of the information or the first portion and the second portion

of the information on the single channel audio signal to generate the

decoded multi-channel audio signal. But, official notice is taken the

concept of having the parameter being the either the first portion of

the information or the first portion and the second portion of the

information on the single channel audio signal to generate the decoded

multi-channel audio signal is simply the inventor's preference thus,

it would have been obvious for one of the ordinary skill in the art to

have modify the combined teaching of Henn et al. and Nishio et al. as

a whole, with the specific wherein applying the either the first

portion of the information or the first portion and the second portion

of the information on the single channel audio signal to generate the

decoded multi-channel audio signal for obtaining the original signal

output.

Re claim 20 has been analyzed and rejected with respect to claim 19.

Re claim 21, the apparatus for supplying a decoded audio signal, the

apparatus comprising: an input for receiving an encoded audio signal,

a decoder as claimed in claim 20 for decoding the encoded audio signal

to obtain a multi-channel output signal, and an output for supplying

or reproducing the multi-channel output signal (fig.1 wt (121)).

6.   Claims 2, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over
Henn et al. (US 7,382,886).

        Re claim 2, Henn et al. disclose of the method of encoding a
multi-channel audio signal comprising at least two audio channels, the
method comprising, generating a single channel audio signal,
generating information from the at least two audio channels allowing
to recover with a required quality level the multi-channel audio
signal from the single channel audio signal and the information (fig.1
wt (121); fig.4b), while, Henn et al. disclose of the above and having
bit for mono signal, But, He fail to disclose of the specific wherein
the generating of the information comprising, receiving a maximum
allowable bit rate of the encoded multi-channel audio signal. But,
Cellario et al. disclose of an encoding system wherein such generating
of the information comprising, receiving a maximum allowable bit rate
of the encoded multi-channel audio signal (col.6 line 1-6; col.13 line
40-47) for purpose of encoding the optimal parameters used to
represent the specific concrete class. Thus, taking the combined
teaching of Henn et al. and Cellario et al. as a whole, it would have
been obvious for one of the ordinary skill in the art to have modify
Henn et al. with the generating of the information comprising,
receiving a maximum allowable bit rate of the encoded multi-channel
audio signal for purpose of encoding the optimal parameters used to
represent the specific concrete class.

The combined teaching of Henn et al. and Cellario et al. as a whole, and only determining a first portion of the information for a first frequency region of the multi-channel audio signal if a bit rate of the encoded multi-channel audio signal comprising the single channel audio signal and the first portion of the information is not higher than the maximum allowable bit rate (Cellario, col.13 line 35-55, col.7 line 1-12; col.11 line 7-23/based on maximum bandwidth the subbands is known for certain region).

Re claim 15 has been analyzed and rejected with respect to claim 2.

Allowable Subject Matter

7.   Claims 9-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DISLER PAUL whose telephone number is (571)270-1187. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. P./
Examiner, Art Unit 2615

/HUYEN D. LE/
Primary Examiner, Art Unit 2615